SIGNIFICANT SOURCE MODIFICATION
AIR QUALITY MANAGEMENT SECTION

Environmental Resources Management Division
2700 South Belmont Avenue
Indianapolis, Indiana 46221-2097

Indianapolis Power and Light Company
Elmer W. Stout Generating Station
3700 South Harding Street
Indianapolis, Indiana 46217

is hereby authorized to construct

One (1) General Electric Gas Turbine Engine Model 7121 EA identified as Emission Unit ID GT6, rated at 95.7 MW (ISO conditions @ 59 degrees Fahrenheit and at a base elevation of 600 feet), Stack ID GT-6. Gas Turbine GT6 is a distillate oil No.2 fired and/or natural gas-fired unit with a design heat input capacity rated at 1,041 Million Btu per hour (Natural Gas) and 1,039 Million Btu per hour (Distillate Oil). NOx emissions will be controlled by Quiet Combustor technology with water injection.

The proposed Gas Turbine will be operated as a simple cycle machine for intermittent operation.

This Significant Source Modification is issued to the above mentioned company (herein known as the Permittee) under the provisions of IAPCB Regulation 2, 326 IAC 2-1 and 40 CFR 52.780, with conditions listed on the attached pages.

Significant Source Modification No.: SMT 097-10952-00033	
Issued by: Robert Holm Robert F. Holm, Ph.D., Administrator Environmental Resources Management Division	Issuance Date: 8-17-99

Construction Conditions

General Construction Conditions

1. That the data and information supplied with the application shall be considered part of this permit. Prior to any proposed change in construction which may affect allowable emissions, the change must be approved by the Environmental Resources Management Division (ERMD), Air Quality Management Section.

2. That this permit to construct does not relieve the Permittee of the responsibility to comply with the provisions of Chapter 5 of the Code of Indianapolis and Marion County and the regulations promulgated thereunder, Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

Effective Date of the Permit

3. That pursuant to IAPCB Regulation 2 (Permits) and IC 13-15-5-3, this permit becomes effective upon its issuance.

4. That pursuant to IAPCB Regulation 2 (Permits) and 326 IAC 2-1-9(b), the Administrator may revoke this permit if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

5. That notwithstanding Construction Condition No. 6, all requirements and conditions of this construction permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to IAPCB Regulation 2 (Permits) and 326 IAC 2 (Permit Review Rules).

First Time Operation Permit

6. That this document shall also become a first-time operation permit pursuant to IAPCB Regulation 2 (Permits) and 326 IAC 2-1-4 (Operating Permits) when, prior to start of operation, the following requirements are met:

   (a) The attached affidavit of construction shall be submitted to the Environmental Resources Management Division (ERMD), Air Quality Management Section, verifying that the facilities were constructed as proposed in the application. The facilities covered in the Construction Permit may begin operating on the date the Affidavit of Construction is postmarked or delivered to ERMD.

   (b) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.

   (c) Permittee shall receive an Operation Permit Validation Letter from the Environmental Resources Management Division (ERMD) and attach it to this document.

   (d) The Permittee shall pay annual fees to IDEM, OAM, and ERMD, within thirty (30) calendar days of receipt of a billing. If the Permittee does not receive a bill from IDEM, OAM, the applicable fee is due April 1 of each year.

Failure to pay may result in administrative enforcement action, or revocation of this permit.

(e). The Permittee has submitted their Part 70 permit application (T097-6566-00033) on September 13, 1996 for the existing source. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

Stack Height

7. The Permittee shall comply with the applicable provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted by using ambient air quality modeling pursuant to 326 IAC 1-7-4.

NSPS Reporting Requirement

8. That pursuant to the New Source Performance Standards (NSPS), Part 60, Subpart GG, the source owner/operator is hereby advised of the requirement to report the following at the appropriate times:

a) Commencement of construction date (no later than 30 days after such date);

b) Anticipated start-up date (not more than 60 days or less than 30 days prior to such date);

c) Actual start-up date (within 15 days after such date); and

d) Date of performance testing (at least 30 days prior to such date), when required by a condition elsewhere in this permit.

Reports are to be sent to:

Indiana Department of Environmental Management
Data Section, Office of Air Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

and

Environmental Resources Management Division Compliance
Air Quality Management Section, Compliance Data Group
2700 South Belmont Avenue
Indianapolis, Indiana 46221-2097

The application and enforcement of these standards have been delegated to the ERMD. The requirements of 40 CFR Part 60 are also federally enforceable.

9. Acid Rain Program

Pursuant to 326 IAC 21 (Acid Deposition Control), the Permittee shall apply for and obtain the Phase II Acid Rain Permit in accordance with 40 CFR 72 and 40 CFR 75 through 40 CFR 78 prior to the proposed equipment operation start up, and shall comply with the provisions of their Phase II Acid Rain Permit and any other applicable requirements contained in 40 CFR 72 and 40 CFR 75 through 40 CFR 78.

To the extent that any requirements of 40 CFR 72 and 40 CFR 78 are inconsistent with the requirements of this Permit, 40 CFR 72 and 40 CFR 78 shall take precedence and shall govern the issuance, denial, revision, reopening, renewal and appeal of the Phase II Acid Rain Permit.

10. That when the facility is constructed and placed into operation the following operation conditions shall be met:

Operation Conditions

General Operation Conditions

1 That the data and information supplied in the application shall be considered part of this permit. Prior to any change in the operation which may result in an increase in allowable emissions exceeding those specified in IAPCB Regulation 2 (Permits) and 326 IAC 2-1-1 (Construction and Operating Permit Requirements), the change must be approved by the Environmental Resources Management Division (ERMD), Air Quality Management Section.

11. That the Permittee shall comply with the provisions of Chapter 5 of the Code of Indianapolis and Marion County and the regulations promulgated thereunder, Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder.

Preventive Maintenance Plan

3. That pursuant to 326 IAC 1-6-3 (Preventive Maintenance Plans), IPL shall prepare and maintain a preventive maintenance plan, including the following information:

(a) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices.

(b) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions.

(c) Identification of the replacement parts which will be maintained in inventory for quick replacement.

The preventive maintenance plan shall be submitted to the Environmental Resources Management Division (ERMD) upon request and shall be subject to review and approval.

Transfer of Permit

4. That pursuant to IAPCB Regulation 2 (Permits) and 326 IAC 2-1-6 (Transfer of Permits):

(a) In the event that ownership of this Gas Turbine is changed, the Permittee shall notify the Environmental Resources Management Division, Air Quality Management Section and the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM), Permit Branch, within thirty (30) days of the change. Notification shall include the date or proposed date of said change.

(b) The written notification shall be sufficient to transfer the permit from the current owner to the new owner.

(c) The ERMD and OAM shall reserve the right to issue a new permit.

Permit Revocation

5. That pursuant to IAPCB Regulation 2 (Permits) and 326 IAC 2-1-9(a) (Revocation of Permits), this permit to construct and operate may be revoked for any of the following causes:

(a) Violation of any conditions of this permit.

(b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.

(c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.

(d) For any cause which establishes in the judgment of ERMD and IDEM, the fact that continuance of this permit is not consistent with purposes of IAPCB Regulation 2 (Permits) and 326 IAC 2-1 (Permit Review Rules).

(e) Noncompliance with the orders issued pursuant to IAPCB Regulation 1-5 (Emergency Reduction Plans) and 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.

Availability of Permit

6. That pursuant to 326 IAC 2-1-3(l), the Permittee shall maintain the applicable permit on the premises of this source and shall make this permit available for inspection by the ERMD, IDEM, or other public official having jurisdiction.

Performance Testing

7. That pursuant to 40 CFR, Part 60.8 (Performance Tests), IAPCB Regulation 2 (Permits) and 326 IAC 2-1-3 (Construction and Operating Permit Requirements) and 326 IAC 12 (New Source Performance Standards), stack tests shall be performed on combustion turbine GT6 to show compliance with NOx emission limits and verification of the manufacturer emission rates for NOx, PM/PM10 (filterable and condensable), SO_2, CO and Lead within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up. These tests shall be performed according to 326 IAC 3-6 (Source Sampling Procedures) using the methods specified in the rule or as approved by the Administrator.

(a) A test protocol shall be submitted to the OAM, Compliance Data Section, and ERMD, Air Quality Management Section, Compliance Data Group, 35 days in advance of the test.

(b) The OAM, Compliance Data Section, and ERMD, Compliance Data Group, shall be notified of the actual test date at least two (2) weeks prior to the date.

(c) All tests reports must be received by OAM, Compliance Data Section, and ERMD, Compliance Data Group, within 45 days of completion of the testing.

(d) Whenever the results of the stack test performed exceed the level specified in this permit, appropriate corrective actions shall be implemented within thirty (30) days of receipt of the test results. These actions shall be implemented immediately unless notified by OAM and ERMD that they are acceptable. The Permittee shall minimize emissions while the corrective actions are being implemented.

(e) Whenever the results of the stack test performed exceed the level specified in this permit, a second test to demonstrate compliance shall be performed within 120 days (from the initial test). Failure of the second test to demonstrate compliance may be grounds for immediate revocation of this permit to operate the affected facility.

(f) Pursuant to 40 CFR Part 60, Subpart GG (New Source Performance Standards), compliance stack testing in accordance with 60.335 (b) and (c) shall be conducted within the same time frames stated above for NOx and SO_2.

Malfunction Condition

8. That pursuant to IAPCB Regulation 1-6-2 (Malfunctions and scheduled maintenance) and 326 IAC 1-6-2 (Records; Notice of Malfunction):

(a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of five (5) years and shall be made available to the Environmental Resources Management Division (ERMD), upon request.

(b) When a malfunction of any facility or emission control equipment occurs with excess emissions which lasts more than one (1) hour, said condition shall be reported to ERMD, using the Malfunction Report Forms(2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.

(c) Failure to report a malfunction of any emission control equipment shall constitute a violation of IAPCB Regulation 1-6 and 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in IAPCB Regulation 1-6-2(a)(1) through (6) and 326 IAC 1-6-2(a)(1) through (6).

(d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [IAPCB Regulation 1-2-39 and 326 IAC 1-2-39]

40 CFR 60, Subpart GG (Stationary Gas Turbines):

9. The Gas Turbine GT6 is subject to the New Source Performance Standard, 326 IAC 12, (40 CFR Part 60.330, (Subpart GG)), since the heat input capacity is greater than 10.7 gigajoules per hour, based on the lower heating value of the fuel fired.

(a) Pursuant to 326 IAC 12-1 and 40 CFR 60, Subpart GG (Stationary Gas Turbines), the Permittee shall:

(1) limit nitrogen oxides emissions, as required by 40 CFR 60.332, to:

$$STD = 0.0075 \frac{(14.4)}{Y} + F,$$

where STD = allowable $_{NOx}$ emissions (percent by volume at 15 percent oxygen on a dry basis).

Y = manufacturer's rated heat rate at manufacturer's rated load (kilojoules per watt hour) or, actual measured heat rate based on lower heating value of fuel as measured at actual peck load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NOx emission allowance for fuel-bound nitrogen as defined in paragraph (a)(3) of 40 CFR 60.332.

(2) limit sulfur dioxide emissions, as required by 40 CFR 60.333, to 0.015 percent by volume at 15 percent oxygen on a dry basis, or use natural gas fuel with a sulfur content less than or equal to 0.8 percent by weight;

(3) install a continuous monitoring system to monitor and record the fuel consumption

and the ratio of water to fuel being fired in the turbine, as required by 40 CFR 60.334(a);

(b) Pursuant to 40 CFR Part 60 Subpart GG and pursuant to the custom schedule for natural gas firing allowed by 40 CFR 60.334(b) and approved by IDEM on December 28, 1994 for Gas Turbines GT4 and GT5 at this facility, the Permittee shall monitor the sulfur content and nitrogen content of the fuel being fired in Emission Unit ID GT6, according to 40 CFR 60.335. The frequency of determination of these values shall be as follows:

(1) For distillate oil:

(A) If the turbine is supplied its fuel from a bulk storage tank, the values shall be determined on each occasion that fuel is transferred to the storage tank from any other source.

(B) If the turbine is supplied its fuel without the intermediate bulk storage, the values shall be determined and recorded daily. Owners, operators or fuel vendors may develop custom schedules for determination of the values based on the design and operation of the affected facility and the characteristics of the fuel supply. These custom schedules shall be substantiated with data and must be approved by the Administrator before they can be used to comply with the monitoring requirements.

(2) For natural gas:

(A) The sulfur and nitrogen content of natural gas shall be obtained and analyzed within thirty (30) days of each one (1) billion standard cubic feet landmark consumption period of natural gas firing is completed. Reporting of the results, calculated as a percent sulfur and nitrogen by weight, shall be done quarterly for the quarter in which the analysis was performed. Sampling and analysis of the natural gas shall be performed according to 40 CFR 60.335(d).

(B) The sulfur content and nitrogen content information obtained from this monitoring shall be used to document compliance with limits stated in conditions 9 (a) (1) and 9 (a) (2).

(c) report periods of excess emissions, as required by 40 CFR 60.334(c).

Emergency Reduction Plans

10. Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

(a) The Permittee prepared and submitted written emergency reduction plans (ERPs) consistent with safe operating procedures on December 28, 1998.

(b) If the ERP is disapproved by IDEM, OAM and ERMD, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP. If after this time, the Permittee does not submit an approvable ERP, IDEM, OAM and ERMD shall supply such a plan.

(c) These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.

(d) Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.

(e) Upon direct notification by IDEM, OAM and ERMD that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate level. [326 IAC 1-5-3]

PSD Minor Source Limit

11. The following limitations will ensure this source modification stays below significant modification levels of criteria pollutants, therefore, the Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR 52.21, shall not apply.

(a) That the criteria pollutants emissions shall be limited to less than PSD significant levels as follows: PM/PM10 emissions (filterable and condensable combined) - to less than 15 tons per year, Nitrogen Oxides (NOx) - to less than 40 tons per year; Sulfur Dioxide (SO2) - to less than 40 tons per year; Carbon Monoxide (CO) - to less than 100 tons per year, Lead - to less than 0.6 tons per year.

(b) NO_x is the constraining pollutant. Therefore, restrictions on the fuel (distillate fuel oil and natural gas) throughput to restrict NO_x emissions to below 40 tons per year would, effectively, limit all other regulated pollutants to less than the major modification thresholds, such that Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR 52.21, will not apply.

(c) Nitrogen Oxides (NO_x)

(1) Gas Turbine GT6 NO_x emission shall be limited to below 0.175 pounds per million BTU when burning distillate oil and to below 0.102 pounds per million BTU when combusting natural gas.

(2) Gas Turbine GT6 distillate oil consumption (no natural gas) shall be limited to below 3.262 million gallons of distillate oil per twelve (12) consecutive months, rolled on a monthly basis, and to natural gas consumption (no fuel oil) below 748.2 Million standard cubic feet per 12 consecutive months rolled on a monthly basis, which is equivalent to NO_x emission below 40 tons per year.

(3) For operational flexibility, 229.4 cubic feet of natural gas can be substituted for one gallon of distillate oil and still comply with the NO_x limitation.

These limitations will ensure this source stays below 40 tons per year of NO_x such that the Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR 52.21, shall not apply.

(d) As an alternative to (b)(1), (b)(2), (b)(3), after the initial stack test, during which the manufacturer hourly emission rates are to be verified and the curve (including four points of heat input versus the measured NOx emission rates) developed, the permittee can report NOx mass emissions in accordance with the procedures in 40 CFR Part 75, Appendix E.

This recordkeeping and reporting method requires an emissions reporting system fully certified by IDEM, ERMD and EPA.

Annual Emission Reporting

12. That pursuant to IAPCB Regulation 2-6 (Annual emission statement rule) and 326 IAC 2-6 (Emission Reporting), the Permittee must annually submit an emission statement for the facility. This statement must be received by April 15 of each year and must comply with the minimum requirements specified in IAPCB Regulation 2-6-4 (Annual emission statement rule) and 326 IAC 2-6-4. The annual statement must be submitted to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

and

Environmental Resources Management Division
Air Quality Management Section, Compliance Data Group
2700 South Belmont Avenue
Indianapolis, Indiana 46221-2097

The annual emission statement covers the twelve (12) consecutive month time period starting December 1 and ending November 30.

13. Opacity

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Exemptions), opacity shall meet the following, unless otherwise stated in this permit:

(a) Opacity shall not exceed an average of thirty percent (30%); any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.

(b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.

Particulate Matter Limitation

14. That pursuant to 326 IAC 6-1-2(a), particulate matter (PM) emissions from the turbine shall be limited to 0.03 grain/dry standard cubic foot.

Compliance with 326 IAC 2-2 PSD NOx (restraining pollutant) emission limit (Condition 11 (a)) will ensure this source stays in compliance with 326 IAC 6-1-2(a).

Fugitive Dust Emissions

15. That pursuant to 326 IAC 6-4 (Fugitive Dust Emissions), the Permittee shall be in violation of 326 IAC 6-4 (Fugitive Dust Emissions) if any of the criteria specified in 326 IAC 6-4-2(1) through (4) are violated. Observations of visible emissions crossing the property line of the source at or near ground level must be made by a qualified representative of ERMD or IDEM [326 IAC 6-4-5(c)].

Sulfur Dioxide Emission Limitations

16. Pursuant to 326 IAC 7-1.1-2, the sulfur dioxide emissions from the Gas Turbine GT6 shall be limited to 0.5 pounds per million Btu for distillate oil combustion.

Compliance with 326 IAC 12 and 40 CFR 60.333 will ensure this source stays in compliance with 326 IAC 7-1.

Pursuant to 326 IAC 2-1.1-2 and 2-1.1-3, any change or modification which may increase SO_2 emissions by 10 tons per year or more from the equipment covered in this permit will need a prior approval.

Compliance and Reporting Requirements

17. That a log of information necessary to document compliance with operation permit condition no/s. 9, 11, and 13 shall be maintained. These records shall be kept for at least the past 5 years period and made available upon request to the Office of Air Management (OAM) and ERMD.

Compliance with 40 CFR 60.335 (Condition 9 (a) (4)) will ensure compliance with the requirements of 326 IAC 3-7-4.

(a) Pursuant to 326 IAC 12, 40 CFR 60.334 and 60.7 (c), owner or operator of this facility, subject to 7-1.2, shall submit the following quarterly reports based on fuel sampling and analyses data in accordance with the Condition 9 (b):

(1) reports of calendar month average sulfur content, heat content, fuel consumption, and sulfure dioxide emission rate in pounds per million Btu's upon request.

(2) The most recent data for sulfur and nitrogen content, required by Condition 9 (b)(1)and 9(b)(2), also including heat content, in both natural gas and fuel oil.

(3) Any one hour periods during which the average water-to-fuel ratio falls below the water-to-fuel ratio determined to demonstrate compliance with 60.332 by the performance test. The report shall include the average water-to-fuel ratio, average fuel consumption, ambient conditions, gas turbine load during the period of excess emissions and the graphs or figures developed as a result of the performance testing.

(4) An excess emission report for any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeded 0.8 percent.

(b) Pursuant to 326 IAC 2-1, the tons of NOx emissions shall be reported on a monthly basis and twelve month rolling basis.

(c) A quarterly summary, if required by the specific conditions, shall be submitted to:

Indiana Department of Environmental Management
Office of Air Management
Compliance Data Section
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

and

Environmental Resources Management Division
Air Quality Management Section
Compliance Data Group
2700 South Belmont Avenue
Indianapolis, Indiana 46221-2097

within 30 days after the end of the quarter being reported in the format attached.

(d) Unless otherwise specified in this permit, any notice, report, or other submissions required by this permit shall be timely if:

(i) Delivered by U.S. mail and postmarked on or before the date it is due; or

(ii) Delivered by any other method if it is received and stamped by IDEM, OAM and ERMD on or before the date it is due.

(e) All instances of deviations from any requirements of this permit must be clearly identified in such reports.

(f) Any corrective actions taken as a result of an exceedance of a limit, an excursion from the parametric values, or a malfunction that may have caused excess emissions must be clearly identified in such reports.

(g) The first report shall cover the period commencing with the postmarked submission date of the Affidavit of Construction.

Affidavit of Construction

I, _____, being duly sworn upon my oath, depose and say:
(Name of the Authorized Representative)

1. I live in _____ County, Indiana and being of sound mind and over twenty-one (21) years of age, I am competent to give this affidavit.

2. I hold the position of _____ for _____.
(Title) (Company Name)

3. By virtue of my position with _____,I have personal
(Company Name)
knowledge of the representations contained in this affidavit and am authorized to make these representations on behalf of _____.
(Company Name)

4. I hereby certify that **the Indianapolis Power and Light Company (Elmer W. Stout Generating Station)** has constructed the **Gas Turbine GT6** in conformity with the requirements and intent of the construction permit application received by the Environmental Resources Management Division on December 3, 1998 and as permitted pursuant to the **Significant Source Modification SMT 097-10952-00033,** issued on _____
–

5. Additional operations/facilities were constructed/substituted as described in the attachment to this document and were not made in accordance with the construction permit. (Delete this statement if i does not apply).

Further Affiant said not.

I affirm under penalties of perjury that the representations contained in this affidavit are true, to the best of my information and belief.

_____
Signature

_____
Date

STATE OF INDIANA)
)SS
COUNTY OF _____)

Subscribed and sworn to me, a notary public in and for _____ County and State of Indiana on this _____ day of _____, 19 _____.

My Commission expires: _____

_____
Signature

_____
Name (typed or printed)

City of Indianapolis
Environmental Resources Management Division
Compliance Data Group
2700 S. Belmont Ave.
Indianapolis, Indiana 46221-2097
Phone 317/327-2234, Fax: 317/327- 2274

Malfunction / Excess Emissions Report

Company Name: **Indianapolis Power & Light Company, Elmer W. Stout Station**

Location: **3700 South Harding Street, Indianapolis, IN 46217**

Permit No.: SMT 097-10952-00033

Source/Facility: **One (1) General Electric Gas Turbine Engine EU ID GT6, rated at 95.7 MW**

Control/Device Which Malfunctioned:
Affected Facility:
Date of Malfunction:
Start Time of Malfunction:
Duration Time of Out of Service: Pollutant/s Emitted During Malfunction: PM, PM10, SO_2, VOC, Other: Estimate of Amount of Pollutant Emitted During the Malfunction (include how estimate was determined):
Measures Taken to Minimize Shutdown Time:
Reasons Why Facility Cannot be Shutdown During Repairs:
Interim Control Measures:
Measures Taken to Correct Malfunction:
Malfunction Reported By: Title: Signature:
Date: Time:

The filing of such information is mandated by Federal, State, and Local Air Pollution Legislation. Violation of this mandate through omission or false information may be subject to penalty.

I hereby certify that the information contained in this notification is complete and accurate to the best of my knowledge.

Submitted by:
_____ Title/Position: _____
(Print)
Signature: _____ Date: _____

ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR MANAGEMENT
COMPLIANCE DATA SECTION
and
INDIANAPOLIS ENVIRONMENTAL RESOURCES MANAGEMENT DIVISION
AIR QUALITY MANAGEMENT SECTION
DATA COMPLIANCE

Quarterly Report

NOx Emissions, Sulfur Content

Source Name:	Indianapolis Power and Light Company, (Elmer W. Stout Station)
Source Address:	3700 South Harding Street, Indianapolis, IN 46217
Mailing Address:	1230 West Morris Street, Indianapolis, Indiana 46221
Permit:	SMT 099-10952-00033
Facility:	Emission Unit ID GT6, Gas Turbine GT6
Parameter:	NOx
Limit:	**3.262 million gallons of oil / 748.2 million dry standard cubic feet of natural gas per rolling 12 month period;** **NOx calendar month average emission rate in lb/MMBtu of less than 0.175 lb/MMBtu (oil) / 0.102 lb/MMBtu (natural gas)** **Weight %S < 0.8 (natural gas).**

Quarter: _____ **Year:** _____

Parameter	Month1	Month2	Month 3
Qquantity of oil consumed this month, gal			
Average Weight % of Sulfur in oil			
Average NOx emission rate, lb/MMBtu (oil)			
Rolling twelve month oil consumption, kgal			
Qquantity of natural gas consumed this month, MMdscf			
Monthly weighted average percent sulfur in natural gas			
Average NOx emission rate, lb/MMBtu (natural gas)			
Monthly average NOx emission, ton:			
Rolling twelve month NOx emission, ton			

Submitted by: _____
Title/Position: _____
Signature: _____
Date: _____
Phone: _____

Indianapolis Environmental Resources Management Division(ERMD)
Air Quality Management Section

Addendum to the
Technical Support Document for Significant Source Modification

Source Background and Description

Source Name:	**Indianapolis Power and Light Company (Elmer W. Stout Generating Station)**
Source Location:	**3700 South Harding Street, Indianapolis, Indiana 46217**
County:	**Marion**
SIC Code:	**4911**
Permit	**SMT 097-10952-00033**
Permit Reviewer:	**B. Gorlin**

On June 11, 1999, the Environmental Resources Management Division (ERMD) had a notice published in the Indianapolis Star, Indianapolis, Indiana, stating that Indianapolis Power and Light Company had applied for a significant source modification. This notice indicated that the source will add one (1) General Electric Gas Turbine Engine Model 7121 EA identified as Emission Unit ID GT6, rated at 95.7 MW (ISO conditions), Stack ID GT-6. Gas Turbine GT6 is a distillate oil No.2 fired and/or natural gas-fired unit with a design heat input capacity rated at 1,041 Million Btu per hour (Natural Gas) and 1,039 Million Btu per hour (Distillate Oil). NOx emissions will be controlled by Quiet Combustor technology with water injection.

During the 30 public notice period ERMD received comments from the Indianapolis Power and Light Company. ERMD response to these comments are stated below (changes are bolded, removed language is struck out):

1. Comment: The TSD preamble statement lists that installation is planned for June 1999. Please remove this statement, as it is obviously no longer accurate and is potentially misleading.

   Response: A statement listing that installation is planned for June 1999, has been removed.

2. Comment: There is no reason to insert a "limit" in this analysis. Calculations show that no one HAP is emitted greater than 10 tons per year and that the total HAP emissions are less than 25 tons per year. The New Source Toxics Rule does not apply.

   Response: Formaldehyde is the only HAP, and its potential emission is less then 10 tons per year. Therefore, the New Source Toxic Rule is not applicable. **Proposed** condition (11) has been removed. **Conditions following it have been renumbered.**

3. Comment: There is no purpose to limiting SO2, CO, PM/PM-10 and Pb emissions to 12 month rolling sums. NOx is by far the constraining pollutant via fuel usage, so additional record keeping and reporting of this data is extraneous and burdensome. Annual numbers for the other pollutants are required and will be reported in the Annual Emission Statement. Alternate emission factors (AEF) are not considered "limits". Rather, according to the IDEM Non-rule Policy Document NPD-14, revised May 1, 1999, stack testing is required only to **validate or verify** the AEF.

   Response: Proposed permit Condition 11 (former Condition 12) has been revised:

PSD Minor Source Limit

11. The following limitations will ensure this source modification stays below significant modification levels of criteria pollutants, therefore, the Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR 52.21, shall not apply.

(a) **That the criteria pollutants emissions shall be limited to less than PSD significant levels as follows: PM/PM10 emissions (filterable and condensable combined) - to less than 15 tons per year, Nitrogen Oxides (NOx) - to less than 40 tons per year; Sulfur Dioxide (SO2) - to less than 40 tons per year; Carbon Monoxide (CO) - to less than 100 tons per year, Lead - to less than 0.6 tons per year.**

(b) **NO_x is the constraining pollutant. Therefore, restrictions on the fuel (distillate fuel oil and natural gas) throughput to restrict NO_x emissions to below 40 tons per year would, effectively, limit all other regulated pollutants to less than the major modification thresholds, such that Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR 52.21, will not apply.**

~~(a)~~**(c)** Nitrogen Oxides (NO_x)

(1) Gas Turbine GT6 NO_x emission shall be limited to below **0.1752** pounds per million BTU when burning distillate oil and to below **0.10~~218~~** pounds per million BTU when combusting natural gas.

(2) Gas Turbine GT6 distillate oil consumption (no natural gas) shall be limited to below 3.262 million gallons of distillate oil per twelve (12) consecutive months, rolled on a monthly basis, and to natural gas consumption (no fuel oil) below **748.2** Million standard cubic feet per 12 consecutive months rolled on a monthly basis, which is equivalent to NO_x emission below 40 tons per year.

(3) For operational flexibility, 229.4 cubic feet of natural gas can be substituted for one gallon of distillate oil and still comply with the NO_x limitation.

(4) These limitations will insure this source stays below 40 tons per year of NO_x such that the Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR 52.21, will not apply.

~~NO_x is the constraining pollutant. Therefore, restrictions on the fuel (distillate fuel oil and natural gas) throughput to restrict NO_x emissions to below 40 tons per year would, effectively, limit all other regulated pollutants to less than the major modification thresholds, such that Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR 52.21, will not apply.~~

~~(b) Sulfur Dioxide (SO_2)~~

~~Gas Turbine GT6 SO_2 emission shall be limited to below **0.051** pounds per million BTU when burning distillate oil.~~

~~Gas Turbine GT6 distillate oil consumption (no natural gas) shall be limited to below **11.202 million gallons of distillate oil** per twelve (12) consecutive months, rolled on a monthly basis, which is equivalent to **SO_2 emission below 40 tons per year**.~~

~~These limitations will insure this source stays below 40 tons per year of SO_2 such that the Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR 52.21, will not apply.~~

~~(c) Carbon Monoxide (CO)~~

~~Gas Turbine GT6 CO emission shall be limited to below **0.0760** pounds per million BTU when burning distillate oil and to below **0.0509** pounds per million BTU when combusting natural gas.~~

~~Gas Turbine GT6 distillate oil consumption (no natural gas) shall be limited to below **18.788 million gallons of distillate oil** per twelve (12) consecutive months, rolled on a monthly basis, and to natural gas consumption (no fuel oil) below **3,741 Million standard cubic feet** per 12 consecutive months rolled on a monthly basis, which is equivalent to **CO emission below 100 tons per year.**~~

~~For operational flexibility, 199.1 cubic feet of natural gas can be substituted for one gallon of distillate oil and still comply with the CO limitation.~~

~~These limitations will insure this source stays below 100 tons per year of CO such that the Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR 52.21, will not apply.~~

~~(d) VOC~~

~~VOC emission shall be limited to below 0.00385 pounds per Million Btu and below 40 tons per year rolled on 12 consecutive months basis, such that the Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR 52.21, will not apply.~~

~~VOC potential emission is 17.5 tons per year, therefore the compliance with the NO_x, SO_2, CO, and PM/PM10 emissions limits will ensure the source will be in compliance with VOC emissions limit.~~

~~(e) PM and PM10~~
~~Gas Turbine GT6 PM10 (filterable and condensable) emission shall be limited to below **0.0096** pounds per million BTU per hour when burning distillate oil and to below **0.0048** pounds per million BTU when combusting natural gas.~~

~~Gas Turbine GT6 distillate oil consumption (no natural gas) shall be limited to below **22.264 million gallons of distillate oil** per twelve (12) consecutive months, rolled on a monthly basis, and to natural gas consumption (no fuel oil) below **5,948 Million standard cubic feet** per 12 consecutive months rolled on a monthly basis, which is equivalent to **PM/PM10 emission below 15 tons per year.**~~

~~For operational flexibility, 267.2 cubic feet of natural gas can be substituted for one gallon of distillate oil and still comply with the PM/PM10 limitation.~~

~~These limitations will insure this source stays below 15 tons per year of PM10 such that the Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR 52.21, will not apply.~~

~~(f) Lead~~

~~Gas Turbine GT6 PM10 emission shall be limited to below **0.00058** pounds per million BTU per hour when burning distillate oil and to below **0.0152** when combusting natural gas.~~

~~Gas Turbine GT6 distillate oil consumption (no natural gas) shall be limited to below **14.843 million gallons of distillate oil** per twelve (12) consecutive months, rolled on a monthly basis, and to natural gas consumption (no fuel oil) below **1,982 Million standard cubic feet** per 12 consecutive months rolled on a monthly basis, which is equivalent to **lead emission**~~

~~below 0.6 tons per year.~~

~~For operational flexibility, 133.6 cubic feet of natural gas can be substituted for one gallon of distillate oil and still comply with the Lead limitation.~~

~~These limitations will insure this source stays below 0.6 tons per year of lead such that the Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR 52.21, will not apply.~~

(d) **As an alternative to (b)(1), (b)(2), (b)(3), after the initial stack test, during which the manufacturer hourly emission rates are to be verified and the curve (including four points of heat input versus the measured NOx emission rates) developed, the permittee can report NOx mass emissions in accordance with the procedures in 40 CFR Part 75, Appendix E. This recordkeeping and reporting method requires an emissions reporting system fully certified by IDEM, ERMD and EPA.**

4. Comment: IPL requests that sampling and analysis of pipeline quality natural gas be conducted for sulfur and nitrogen content every 1 billion cubic feet. A request similar to this was approved for the existing combustion turbines located at E. W. Stout plant. Historical/supporting data has been developed to verify the consistent quality of the gas. This request is being made pursuant to the opportunity allowed under 40 CPR Part 60.334(b)(2).

For clarification, fuel oil shall be sampled as-delivered to the fuel oil storage tanks.

Response: Operation Condition 9 language has been changed:

~~(4) monitor the sulfur content and nitrogen content of the fuel being fired in the turbine, as required by 40 CFR 60.334(b); and~~

~~(5) report periods of excess emissions, as required by 40 CFR 60.334(c).~~

(b) Pursuant to 40 CFR Part 60 Subpart GG and pursuant to the custom schedule for natural gas firing allowed by 40 CFR 60.334(b) and approved by IDEM on December 28, 1994 for other Gas Turbines at this facility, the Permittee shall monitor the sulfur content and nitrogen content of the fuel being fired in Emission Unit ID GT6, according to 40 CFR 60.335. The frequency of determination of these values shall be as follows:

(1) For distillate oil:

(A) If the turbine is supplied its fuel from a bulk storage tank, the values shall be determined on each occasion that fuel is transferred to the storage tank from any other source.

(B) If the turbine is supplied its fuel without the intermediate bulk storage, the values shall be determined and recorded daily. Owners, operators or fuel vendors may develop custom schedules for determination of the values based on the design and operation of the affected facility and the characteristics of the fuel supply. These custom schedules shall be substantiated with data and must be approved by the Administrator before they can be used to comply with the monitoring requirements.

(2) For natural gas:

(A) The sulfur and nitrogen content of natural gas shall be obtained and analyzed within thirty (30) days of each one (1) billion standard cubic feet landmark consumption period of natural gas firing is completed. Reporting of the results, calculated as a percent sulfur by weight, shall be done quarterly for the quarter in which the analysis was performed. Sampling and analysis of the natural gas shall be performed according to 40 CFR 60.335(d).

(B) The sulfur content and nitrogen content information obtained from this monitoring shall be used to document compliance with limits stated in conditions 9 (a) (1) and 9 (a) (2).

(c) report periods of excess emissions, as required by 40 CFR 60.334(c).

5. Comment: It is not necessary to include the citation referencing the Open Burning regulation in this permit (Condition 14).

Response: Proposed Operation Condition 14 has been removed.

7. Comment: The applicability of the Acid Rain program requirements is not referenced in this permit.

Response: Construction Condition 9 is added:

9. <u>Acid Rain Program</u>

Pursuant to 326 IAC 21 (Acid Deposition Control), the Permittee shall apply for and obtain the Phase II Acid Rain Permit in accordance with 40 CFR 72 and 40 CFR 75 through 40 CFR 78 prior to the proposed equipment operation start up, and shall comply with the provisions of their Phase II Acid Rain Permit and any other applicable requirements contained in 40 CFR 72 and 40 CFR 75 through 40 CFR 78.

To the extent that any requirements of 40 CFR 72 and 40 CFR 78 are inconsistent with the requirements of this Permit, 40 CFR 72 and 40 CFR 78 shall take precedence and shall govern the issuance, denial, revision, reopening, renewal and appeal of the Phase II Acid Rain Permit.

Indiana Department of Environmental Management
Office of Air Management
and
Indianapolis Environmental Resources Management Division

Technical Support Document (TSD) for a Significant Source Modification

Source Background and Description

Source Name:	**Indianapolis Power and Light Company (Elmer W. Stout Generating Station)**
Source Location:	**3700 South Harding Street, Indianapolis, Indiana 46217**
County:	**Marion**
SIC Code:	**4911**
Permit	**SMT 097-10952-00033**
Permit Reviewer:	**B. Gorlin**

The Environmental Resources Management Division (ERMD) has reviewed a Construction Permit application from the Indianapolis Power and Light Company relating to the construction and operation of the following equipment at the Elmer W. Stout Generating Station for electrical power generation under a Standard Industrial Classification (SIC) Code of 4911:

One (1) General Electric Gas Turbine Engine Model 7121 EA identified as Emission Unit ID GT6, rated at 95.7 MW (ISO conditions @ 59 degrees Fahrenheit and at a base elevation of 600 feet), Stack ID GT-6. Gas Turbine GT6 is a distillate oil No.2 fired and/or natural gas-fired unit with a design heat input capacity rated at 1,041 Million Btu per hour (Natural Gas) and 1,039 Million Btu per hour (Distillate Oil). NOx emissions will be controlled by Quiet Combustor technology with water injection.

The proposed Gas Turbine will be operated as a simple cycle machine for intermittent operation.

No other technological equipment will be added or changed.

Stack Summary

Stack ID	Operation	Control Device	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Flow Rate (dscfm)	Temperature (^{0}F)
GT-6	Natural Gas/Distillate Oil No.2 fired Combustion Turbine	Quiet Combustor with water injection	66	8'8" x 17'4"	1,580,000 (Gas) 1,589,000 (Fuel Oil)	512,550 515,810	1055

Recommendation

The staff recommends to the Administrator that the Construction Permit Modification and operation be approved. This recommendation is based on the following facts and conditions:

A complete application for the purposes of this review was received on December 3, 1998.

Emissions Calculations

See Appendix A (Emissions Calculation Spreadsheets) for detailed calculations.

Total Potential and Allowable Emissions

Indiana Permit Allowable Emissions Definition (after compliance with applicable rules, based on 8,760 hours of operation per year at rated capacity) for Stack ID GT-6:

Pollutant	Allowable Emissions ton/year	Potential Emissions (before control) (ton/year)
Particulate Matter (PM10)	<15	43.8
Sulfur Dioxide (SO_2)	<25	232.1
Volatile Organic Compounds (VOC)	<40	17.5
Carbon Monoxide (CO)	<100	346.0
Nitrogen Oxides (NO_x)	<40	797.2
Single Hazardous Air Pollutant (HAP)	<10	5.5
Combination of HAPs	<25	10.8

For the purpose of this permit, all Particulate Matter (PM) emissions are considered to be PM10.

Allowable emissions are limited such that the requirements of rule 326 IAC 2-2, Prevention of Significant Deterioration will not apply to this new Gas Turbine GT6.

For the purpose of this permit all PM emission is considered to be PM10.

Potential Emissions are calculated using Maximum Emission Rates supplied by the source (manufacturer data).

Allowable emissions (as defined in the Indiana Rule) of regulated pollutants (SO_2, VOC, NOx, CO) are greater than 25 tons per year. Therefore, pursuant to IAPCB Regulation 2 (Permits), a construction permit is required.

County Attainment Status

(a) Volatile organic compounds (VOC) and oxides of nitrogen (NOx) are precursors for the formation of ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to the ozone standards. Marion County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

(b) Marion County has been classified as attainment or unclassifiable for PM10, SO_2, and CO.. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Source Status

Existing Source PSD Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (ton/yr)
PM10	**>100**
SO_2	**>100**
VOC	**>100**
CO	**>100**
NO_x	**>100**

The existing source emissions have been estimated based on allowable emissions in the existing permits issued to IPL Elmer W. Stout Generating Station.

This existing source is a major stationary source because it is in one of the 28 listed source categories and at least one regulated pollutant is emitted at a rate of 100 tons per year or more.

Emission Calculations

See Appendix A (one page) of this document for detailed emissions calculations.

Proposed Modification

Allowable PSD emissions from the proposed modification (after compliance with applicable rules, based on 8,760 hours of operation per year at rated capacity and/or as limited):

Pollutant	PM10 (ton/yr)	Lead (ton/yr)	CO (ton/yr)	SO_2 (ton/yr)	NO_x (ton/yr)	VOC (ton/yr)
Proposed Modification	<15	<0.6	<100	<40	<40	<40
PSD and Emission Offset Rules Significant Levels	**15**	**0.6**	**100**	**40**	**40**	**40**

This modification to an existing major source is not major because the limited emissions increases are less than PSD and Emissions Offsets significant levels. Therefore, pursuant to 326 IAC 2-2 (40 CFR 52.21) and 326 IAC 2-3, the PSD and Emissions Offset requirements, respectively, shall not apply.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source has submitted their Part 70 Operating Permit (T097-6566-00033) on September 13, 1996. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

Federal Rule Applicability

40 CFR 60, Subpart GG (Stationary Gas Turbines):

The gas turbine GT6 is subject to the New Source Performance Standard, 326 IAC 12, (40 CFR Part 60.330, (Subpart GG)), since the heat input capacity is greater than 10.7 gigajoules per hour, based on the lower heating value of the fuel fired.

(a) Pursuant to 326 IAC 12-1 and 40 CFR 60, Subpart GG (Stationary Gas Turbines), the Permittee shall:

(1) limit nitrogen oxides emissions, as required by 40 CFR 60.332, to:

$$STD = 0.0075 \frac{(14.4)}{Y} + F,$$

where STD = allowable $_{NOX}$ emissions (percent by volume at 15 percent oxygen on a dry basis).

Y = manufacturer's rated heat rate at manufacturer's rated load (kilojoules per watt hour) or, actual measured heat rate based on lower heating value of fuel as measured at actual peck load for the facility. The value of Y shall not exceed 14.4 kilojoules per watt hour.

F = NOx emission allowance for fuel-bound nitrogen as defined in paragraph (a)(3) of 40 CFR 60.332.

(2) limit sulfur dioxide emissions, as required by 40 CFR 60.333, to 0.015 percent by volume at 15 percent oxygen on a dry basis, or use natural gas fuel with a sulfur content less than or equal to 0.8 percent by weight;

(3) install a continuous monitoring system to monitor and record the fuel consumption and the ratio of water to fuel being fired in the turbine, as required by 40 CFR 60.334(a);

(b) Pursuant to 40 CFR Part 60 Subpart GG and pursuant to the custom schedule for natural gas firing allowed by 40 CFR 60.334(b) and approved by IDEM on December 28, 1994 for Gas Turbines GT4 and GT5 at this facility, the Permittee shall monitor the sulfur content and nitrogen content of the fuel being fired in Emission Unit ID GT6, according to 40 CFR 60.335. The frequency of determination of these values shall be as follows:

(1) For distillate oil:

(A) If the turbine is supplied its fuel from a bulk storage tank, the values shall be determined on each occasion that fuel is transferred to the storage tank from any other source.

(B) If the turbine is supplied its fuel without the intermediate bulk storage, the values shall be determined and recorded daily. Owners, operators or fuel vendors may develop custom schedules for determination of the values based on the design and operation of the affected facility and the characteristics of the fuel supply. These custom schedules shall be substantiated with data and must be approved by the Administrator before they can be used to comply with the monitoring requirements.

(2) For natural gas:

(A) The sulfur and nitrogen content of natural gas shall be obtained and analyzed within thirty (30) days of each one (1) billion standard cubic feet landmark consumption period of natural gas firing is completed. Reporting of the results, calculated as a percent sulfur and nitrogen by weight, shall be done quarterly for the quarter in which the analysis was performed. Sampling and analysis of the natural gas shall be performed according to 40 CFR 60.335(d).

(B) The sulfur content and nitrogen content information obtained from this monitoring shall be used to document compliance with limits

stated in conditions 9 (a) (1) and 9 (a) (2).

(c) report periods of excess emissions, as required by 40 CFR 60.334(c).

40 CFR Part 72-80 (Acid Rain Program)

Pursuant to 326 IAC 21 (Acid Deposition Control), the Permittee shall comply with the provisions of their Phase II Acid Rain Permit and any other applicable requirements contained in 40 CFR 72 and 40 CFR 75 through 40 CFR 78.

State Rule Applicability

326 IAC 1-7 (Stack Height)

The Permittee shall comply with the applicable provisions of 326 IAC 1-7 since it has a potential to emit more than 25 ton per year of SO_2 and PM.

326 IAC 1-6-3 (Preventive Maintenance):

(a) The Permittee shall prepare and maintain Preventive Maintenance Plans (PMP) within ninety (90) days after issuance of this permit, including the following information on each:

(1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;

(2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions;

(3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

(b) The Permittee shall implement the Preventive Maintenance Plans as necessary to ensure that lack of proper maintenance does not cause or contribute to a violation of any limitation on emissions or potential to emit.

(c) PMP's shall be submitted to IDEM (OAM) and ERMD upon request and shall be subject to review and approval by IDEM (OAM) and ERMD.

326 IAC 2-1-3.4 (New Source Toxics Rule)

Pursuant to EPA VOC Specification Manual (EPA 450/2-88-003a, April 1988) formaldehyde potential emissions (5.3 ton/yr) from combustion turbine are conservatively estimated at thirty (30) percent of the VOC emissions.

No HAPs will be emitted at 10 ton/yr of individual HAP or 25 ton/yr of combined HAP emissions. Therefore, this New Source Toxics Rule (326 IAC 2-1-3.4), will not apply.

326 IAC 2-2 (Prevention of Significant Deterioration):

The following limitations will ensure this source modification stays below significant modification levels of criteria pollutants, therefore, the Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR 52.21, shall not apply.

(a) NO_X is the constraining pollutant. Therefore, restrictions on the fuel (distillate fuel oil and

natural gas) throughput to restrict NO_x emissions to below 40 tons per year would, effectively, limit all other regulated pollutants to less than the major modification thresholds, such that Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR 52.21, will not apply.

(b) Nitrogen Oxides (NO_x)

(1) Gas Turbine GT6 NO_x emission shall be limited to below 0.1752 pounds per million BTU when burning distillate oil and to below 0.1018 pounds per million BTU when combusting natural gas.

(2) Gas Turbine GT6 distillate oil consumption (no natural gas) shall be limited to below 3.262 million gallons of distillate oil per twelve (12) consecutive months, rolled on a monthly basis, and to natural gas consumption (no fuel oil) below 748.2 Million standard cubic feet per 12 consecutive months rolled on a monthly basis, which is equivalent to NO_x emission below 40 tons per year.

(3) For operational flexibility, 229.4 cubic feet of natural gas can be substituted for one gallon of distillate oil and still comply with the NO_x limitation.

These limitations will ensure this source stays below 40 tons per year of NO_x such that the Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR 52.21, will not apply.

(c) As an alternative to (b)(1), (b)(2), (b)(3), after the initial stack test, during which the manufacturer hourly emission rates are to be verified and the curve (including four points of heat input versus the measured NOx emission rates) developed, the permittee can report NOx mass emissions in accordance with the procedures in 40 CFR Part 75, Appendix E. This recordkeeping and reporting method requires an emissions reporting system fully certified by IDEM, ERMD and EPA.

326 IAC 2-6 (Emission Reporting)

This facility is subject to 326 IAC 2-6 (Emission Reporting), because the source emits more than 100 tons/yr of NOx, SO_2, and CO. Pursuant to this rule, the owner/operator of this facility must annually submit an emission statement of the facility. The annual statement must be received by April 15 of each year and must contain the minimum requirements as specified in 326 IAC 2-6-4.

326 IAC 5-1-2 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), the opacity shall meet the following:

(a) Opacity shall not exceed an average of 30% any one (1) six (6) minute averaging period.

(b) Opacity shall not exceed 60% for more than a cumulative total of 15 minutes (60 readings as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute non-overlapping integrated averages for a continuous opacity monitor in a 6-hour period.

326 IAC 6-1-2 (Particulate Emissions Limitations, Section 2(a), General Sources)

Since the source is located in Marion County emissions from the GT6 turbine shall be limited to 0.03 grain per dry standard cubic foot.

PM (PM10) potential emission is 0.002 grain per dry standard cubic foot, therefore, the source will be in compliance with this rule.

No other 326 IAC 6 rules apply.

326 IAC 7-1 (Sulfur Dioxide Emission Limitations)

Pursuant to 326 IAC 7-1.1-2, the sulfur dioxide emissions from the two (2) turbines shall be limited to 0.5

pounds per million Btu for distillate oil combustion.

Compliance with 326 IAC 2-2 PSD SO_2 emission limit (0.051lb/MMBtu) will ensure this source stays in compliance with 326 IAC 7-1.

Compliance and Reporting Requirements

That a log of information necessary to document compliance with operation permit condition no/s. 9, 11, and 13 shall be maintained. These records shall be kept for at least the past 5 years period and made available upon request to the Office of Air Management (OAM) and ERMD.

(a) Pursuant to 326 IAC 12, 40 CFR 60.334 and 60.7 (c), owner or operator of this facility, subject to 7-1.2, shall submit the following quarterly reports based on fuel sampling and analyses data in accordance with the Condition 9 (b):

(1) reports of calendar month average sulfur content, heat content, fuel consumption, and sulfur dioxide emission rate in pounds per million Btu's upon request.

(2) The most recent data for sulfur and nitrogen content, required by Condition 9 (b)(1)and 9(b)(2), also including heat content, in both natural gas and fuel oil.

(3) Any one hour periods during which the average water-to-fuel ratio falls below the water-to-fuel ratio determined to demonstrate compliance with 60.332 by the performance test. The report shall include the average water-to-fuel ratio, average fuel consumption, ambient conditions, gas turbine load during the period of excess emissions and the graphs or figures developed as a result of the performance testing.

(4) An excess emission report for any daily period during which the sulfur content of the fuel being fired in the gas turbine exceeded 0.8 percent.

(b) Pursuant to 326 IAC 2-1, the tons of NOx emissions shall be reported on a monthly basis and twelve month rolling basis.

(c) A quarterly summary, if required by the specific conditions.

326 8-1-6 (General Provisions relating to VOC rules)

326 IAC 8-1-6 does not apply to this Gas Turbine GT6 because the potential VOC emissions are less than 25 tons per year per unit.

No other 326 IAC 8 rules apply.

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 187 hazardous air pollutants (HAPs) set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics in the Construction Permit Application Form GSD-08.

(a) This Gas Turbine GT6 will not emit levels of air toxics greater than those that constitute significant major source modification applicability according to Section 112 of the 1990 Clean Air Act Amendments.

Conclusion

The construction and operation of this Gas Turbine shall be subject to the conditions of the attached proposed Significant Source Modification No. **SMT 097-10952-00033**.

Emission Unit ID GT6
General Electric
Oil/Gas fired Gas Turbine

Appendix A: Emission Calculations

Company Name: Indianapolis Power & Light Company (EW Stout Generating Station)
Address City IN Zip: 3700 South Harding Street, Indianapolis, Indiana 46217
SMT 097-10952-00033
Plt ID: 097-00033
Reviewer: Boris Gorlin

Distillate Oil
Heat Input Capacity
MMBtu/hr

1,039.0

Potential Throughput
65,011.7 kgals/year
or 0.065 MMgal/year

S = Weight % Sulfur
0.05

	Pollutant							
	PM	PM10	SO2	NOx	VOC	CO	Formaldehyd	Pb
Manufacturer's Emission Rate in lb/hr	10.0	10.0	53.0	182.0	4.0	79.0	30% of VOC*	0.6
AP-42 Emission Factors, lb/MMBtu	0.0510	0.0510	0.05050	0.69800	0.0170	0.0460		
Potential Emission in tons/yr (Manufacturer Emission Rates)	43.8	43.8	232.1	797.2	17.5	346.0	5.3	2.63
Potential Emission in tons/yr (AP-42 Emission Factors)	277.6	277.6	229.6	3,176.5	77.4	218.4	23.2	
Limited Emissions (less than...), ton/yr:	15.00	15.00	40.00	40.00		100.00		0.60
Short Term Limit, lb/MMBtu:				0.17517				
Limited Fuel (Distillate Oil) Throughput, kga/yr:	22,264	22,264	11,202	3,262		18,788		14,843
Limited Emissions at NOx fuel usage limit:	2.2	2.2	11.6	40.0	0.9	**17.4**	0.3	0.1

Note: AP-42 SO2 Emission Factor: 1.01xS=1.01x0.05=0.0505

Methodology
1 gallon of No. 2 Fuel Oil has a heating value of 140,000 Btu
Potential Throughput (kgals/year) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1kgal per 1000 gallon x 1 gal per 0.140 MM Btu
Emission Rates at peak conditions, lb/hr, are supplied by the source (manufacturer data).
Short Term Limit (lb/MMBtu) = Emission Rate (lb/hr) / Heat Input Capacity (MMBtu/hr)
Emission (tons/yr) = Emission Rate (lb/hr) x 8760 hr/yr x 1 ton/2,000 lb
* Formaldehyde Emission is 30% of VOC (the EPA "Speciate" program).

HAPs	
	* Nickel
Emission Factor in lb/MMBtu	1.2E-03
Potential Emission in tons/yr	5.5

Methodology
* = Highest HAPs emission factor from AP-42
Emission Factors are from AP 42, Table 3.1-7
Emission (tons/yr) = Heat Input (MMBtu/hr) x Emission Factor (lb/MMbtu) x 8760 hr/yr x ton/2,000 lb

Compliance Determination
PSD Permit of 8/27/92 contains NOx & SO2 limitations on fuel use and tons per year emissions

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Natural Gas
Heat Input Capacity
MMBtu/hr

1041.0

Potential Throughput
8,664.9 MMscf/yr

S = Weight % Sulfur
8.10E-04

	Pollutant							
	PM	PM10	SO2	NOx	VOC	CO	Formaldehyd	Pb
Emission Rate in lb/hr	5.000	5.000	0.001	106.000	4.000	53.000	30% of VOC*	0.6
Potential Emission in tons/yr	21.9	21.9	0.0044	464.3	17.5	232.1	5.3	2.63
Limited Emissions, ton/yr:	15.00	15.00	40.00	40.00		100.00		0.60
Short Term Limit, lb/MMBtu:				0.10183				
Limited Fuel (Natural Gas) Throughput, MMscf/yr:	5,948.6	5,948.6		748.2		3,741.2		1,982.9
Natural gas (scf) / Distillate oil (gal) conversion factor:				229.4				
Limited Emissions at NOx fuel usage limit:	1.9	1.9	0.00038	40.0	1.5	20.0	0.5	0.2

Methodology
Potential Throughput (MMscf/yr) = Heat Input Capacity (MMBtu/hr) x 8,760 hr/yr x 1MMscf / 1050 MMscf
Emission Rates at peak conditions, lb/hr, are supplied by the source (manufacturer data).
Emission (tons/yr) = Emission Rate (lb/hr) x 8760 hr/yr x 1 ton/2,000 lb
* Formaldehyde Emission is 30% of VOC (the EPA "Speciate" program).